RE: Avery - volume and plume thickness comparison
Hall, Steven G.
to:
John M. Herzog
12/16/2011 01:55 PM
Cc:
Earl Liverman, Angie Zavala, "Iain H. Wingard", Richard Mednick
Hide Details
From: "Hall, Steven G." <SGHall@ene.com>

To: "John M. Herzog" <jherzog@geoengineers.com>

Cc: Earl Liverman/R10/USEPA/US@EPA, Angie Zavala/R10/USEPA/US@EPA, "Iain H. Wingard" <iwingard@geoengineers.com>, Richard Mednick/R10/USEPA/US@EPA

John –

You are correct that we did not assume any tapering at the edges of the plume area. We did this to be conservative, and because there is little data about the thickness of the plume at the boundaries.

We also agree that it looks like we have identified the major sources of variation in our volume estimates.

Thanks,
Steve

From: John M. Herzog [mailto:jherzog@geoengineers.com]
Sent: Thursday, December 15, 2011 1:55 PM
To: Hall, Steven G.
Cc: Liverman.Earl@epamail.epa.gov; Zavala.Angie@epamail.epa.gov; Iain H. Wingard
Subject: RE: Avery - volume and plume thickness comparison

Hi Steve,

We have been analyzing the Potlatch and EPA volume estimates by comparing our depth assignments to yours. It appears that the differences in assumption on the vertical extent are relatively minor relative to the overall volume. We are unclear however, how you are handling the edge assignments when you calculate the volume.

When we drop your depth assumptions into GIS and use our edge assignments, the difference

in volume is on the order of 1,500 CY.
In an effort to explore what estimating assumptions you may be using we extended the maximum depth of contamination from near boundary locations to the edge – this essentially assumes that there is a wall of contamination at the boundary rather than a taper out. When we do this we calculate approximately 47,000 CY which is close to the 50,000 you had previously mentioned.

Can you confirm that this is the approach you took to calculate the volume and if so, describe the justification for why there is no tapering to the edge.

Thank you, we appreciate the help.

From: Hall, Steven G. [mailto:SGHall@ene.com]
Sent: Friday, December 09, 2011 10:32 AM
To: John M. Herzog; Iain H. Wingard
Cc: Liverman.Earl@epamail.epa.gov; Zavala.Angie@epamail.epa.gov
Subject: Avery - volume and plume thickness comparison

John, Iain –

We have taken your spreadsheet with your comments and assumptions for product thickness, and we have inserted our own assumptions and comments. The updated spreadsheet is attached.

We found that your approach is reasonable, although there are some key differences from our approach. We understand that you used a standard 4.5 feet assumption to represent the smear zone where you believed there was insufficient data. One point that may explain some of the difference in the volume estimate is the actual thickness of the smear zone. In the EPA EE/CA, we observed that groundwater elevations typically ranged from 10 to 16 feet below ground surface.

For the EPA/START estimate, we used actual observations and did not use a comparable assumption about the thickness of the smear zone. For many boreholes, your assumption provided a greater thickness than we used in our estimate. However, there were also boreholes where we estimated a greater thickness than you did. For example:

-- In EMW-06 and ESB-04, we estimated 6 feet based on the borehole logs, compared to 4.5 feet.

-- In TP-08, we estimated 11 feet based on the borehole logs, compared to 4.5 feet.

-- In TS-03, we estimated 15 feet based on the borehole logs, compared to 7.5 feet.

Also, we have a question about TP-06. In the comment field, you indicate that the soil from 10 to 17 feet bgs requires cleanup. However, the thickness column indicates 0 feet.

For the area of the plume, we opened the GIS files that you provided and re-calculated the plume area and volume. To clarify, EPA's current area/volume estimate have been made using our estimates from a scan of the plume area figure that you provided us in the November 3 meeting. The comparison of our estimate from the scan and the actual GIS files is summarized in the attached table. As you can see, using the GIS files, the plume area and volume would actually be slightly larger.

Please let us know if you have any questions or need any additional information.

Thanks,
Steve

Steve Hall, *START Removal Project Leader*
Ecology and Environment, Inc.
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